

"If we knew what it was we were doing, it would not be called research, would it?"

Albert Einstein

SIMPLY SPATIAL

RMMC'S RESEARCH AND SCIENCE NEWSLETTER

INSIDE THIS ISSUE:

Contingency Planning	2
Bits & Bytes	2
3-D Fire Visualizations	2
Mount St. Helens	3
Welcome	3
Events	4
Trivia Quiz	4
Travels with Bev	5
Social Committee	5
In the Spotlight	6



From the Editors:

As summer winds down and the new fiscal year is just around the corner, we hope that you are refreshed from the summer break. Lots of interesting and challenging changes are on the horizon. From organizational changes to program and budget changes, we are certain to be extremely busy in the months to come. We hope you enjoy this issue of Simply Spatial.

SIERRA WILDLAND FIRE REPORTING SYSTEM

The fire management community in the southern Sierra Nevada faces complex issues both in responding to wildfires and completing prescribed fire projects. The Sierra Nevada has highly fragmented ownership patterns and substantial and increasing human encroachment on native, fire dependent ecosystems. Increased fuel loadings after nearly 100 years of fire suppression has increased the potential for catastrophic fires and the need for prescribed fire programs to reduce fuel loadings and protect human and ecological values.

Additionally, severe air quality and smoke emission issues in the San Joaquin Valley require that the federal agencies maintain an integrated dataset of current fire activity to negotiate with the California Air Quality Board. Collaboration with the USGS Geography Discipline, Rocky Mountain Mapping Center (RMMC) is meeting this need.

In 2000, the USGS began collaborating with the Southern Sierra Geographic Information Cooperative (SSGIC) to develop an ArcIMS enabled website administered by the RMMC. The success of this project and established infrastructure and relationships made expanding from the SSGIC group to the Southern Sierra Fire Management Officers (SSFMO) group in 2004 a natural extension. The member agencies of the SSFMO include four national forests (Inyo, Stanislaus, Sequoia and Sierra), two national parks (Sequoia & Kings Canyon and Yosemite), and the Bakersfield field office of the Bureau of Land Management (Fig. 1). The project area encompasses nearly 7.4 million acres of the southern Sierra Nevada.



Figure 1 - Member agencies of the Southern Sierra Fire Management Officers Group (SSFMO)

The SSFMO website, still under development, is located at:

<http://sierrafire.cr.usgs.gov/SWFRS/>

Bits & Bytes

Central Region has created a wonderful newsletter to keep users informed of Information Technology issues that affect all of us. The newsletter is designed and developed by Jan Coffelt and Geri Garcia. You can read the newsletter on-line at :

<http://rgioit.cr.usgs.gov/itinformant.htm>

Employees have a few options that they may exercise to use the same Microsoft products at home that they use at work: existing licenses, MS Home Use Program, and MS Employee Purchase Program. An organizational code is required to access the MS website, and the codes cannot be distributed to non-USGS product users.

Although RMMC falls under the DOI MS Enterprise Agreement, USGS still owns 12,000 MS Office 2000 Premium Edition licenses which can be used at home with no charge.

More recently, users may now participate in the MS Home Use Program (HUP) in conjunction with the DOI license agreement. This program allows employees to purchase a copy of the MS Office software, for which they are licensed, to install on their home computer, one product per employee. At this time, the program includes only MS Office 2002 and 2003.

The MS Employee Purchase Program allows USGS employees to buy up to three copies of any one item of Microsoft's popular retail products. Anything you buy under this program should be charged to your personal credit card.

For further information about using Microsoft products at home, visit the GIO website at:

<http://bwtst.usgs.gov/apps/core/SoftwareAssurance/index.html>

3-D Wildfire Visualization

A new website has been created that highlights the major wildfires occurring across the U.S. The fires can be viewed as 2-D satellite maps or 3-D VRML (Virtual Reality Modeling Language) satellite/terrain map models. NASA's (EOS AM-1) Terra satellite uses the MODIS infrared sensor to display wildfire hot spots from a 55-degree scanning pattern at the EOS orbit of 705 km and provides global coverage every one to two

days. Active wildfire burning is shown in orange and accumulated 2004 burn areas are shown in black.



Alaskan wildfires have burned over six million acres, roughly equal to the size of the state of New Hampshire. By comparison, Colorado's Hayman fire burned 140,000 acres in 2002.

For more information about the 3-D visualizations, visit:

<http://rockyitr.cr.usgs.gov/3Dwildfires>

or contact Drew Probst, dtprobst@usgs.gov

Contingency Plan Testing

Contingency Plan live tests were completed for the six RMMC components of *The National Map* re-engineering project. These tests are required for systems security certification and accreditation (C&A). The six systems tested were: 1) Domain Servers, 2) UNIX systems, 3) IbiS, 4) Rocky-Web, 5) NHD, and 6) HAWS.



Mike Tate and Norma Schneider

After many weeks and months of writing required security documents and performing tabletop exercises, it was time for a "true" test. A contingency plan (CP) lab was set up for this purpose and equipped with a Sun 880 server, five HP Proliant Intel servers, 2.5 TB of data storage, and multiple workstations. An isolated vLAN was set up to simulate an alternate off-site location.

Each team's goal was to use their CP kit consisting of planning documents, Legato backup tapes, scripts, software CDs and other necessary documents to restore their systems from scratch on the CP lab equipment.

The tests proved to be invaluable to the participants, many of whom were not involved in the origin of the systems and applications in use today. Teams were able to test their backup tapes and to ensure that their CP kits were complete. In general, all tests were successful and it was a good learning experience for all involved. A number of items were uncovered and corrected during the tests. Restoring data from Legato backup tapes was the weakest link in the entire process. This was especially true when restoring large databases; it was found that the time to restore data from tape exceeded the total allowable system downtime in some cases. Possible solutions to this weakness include 1) new Legato configurations and procedures, 2) mirroring of large data sets to an offsite disk array, and 3) deploying hot backup sites for critical applications and data.

The CP test environment also allowed the testing of a number of future scenarios: 1) Windows servers were configured as Windows 2003 servers and an Active Directory (AD) was built successfully, 2) Solaris 9 was installed on the Sun 880 server and it was found that all applications running on earlier versions of Solaris ran without error on Solaris 9, and 3) Rocky Web, which was originally built on a DG server using Netscape, ported seamlessly to Apache under Solaris 9.



Nick DeLisa, Todd Sales, and Ken Lloyd

Much was learned from these tests and the level of confidence was raised that we are, in fact, prepared to efficiently rebuild systems in the event of a contingency situation at RMMC. For further information contact Brian Bradley, bsbradley@usgs.gov

SIERRA WILDLAND FIRE REPORTING SYSTEM (CON'T)

Input forms allow local dispatchers from each agency to immediately add new fires to a single regional database. Managers can create

summary reports to have current information at weekly Air Quality Board meetings. An ArcIMS supported map service (Fig. 2) displays

2004 fires to date as well as agency burn plans. To support the ongoing effort to establish national data standards, the SSFMO fire database has been designed to integrate with the existing 209 database on which the GeoMAC large fire application is based,

<http://geomac.cr.usgs.gov>

For further information about the South Sierra Fire Management Officers website and project, please contact John Guthrie, jdguthrie@usgs.gov

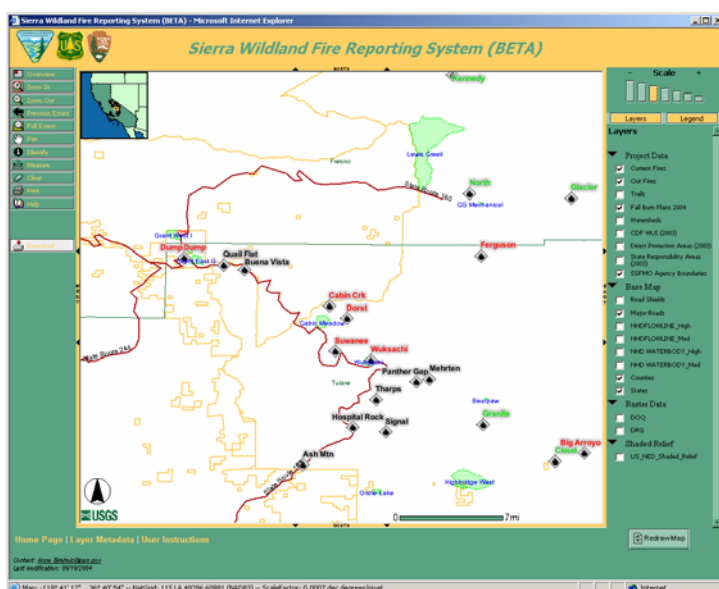
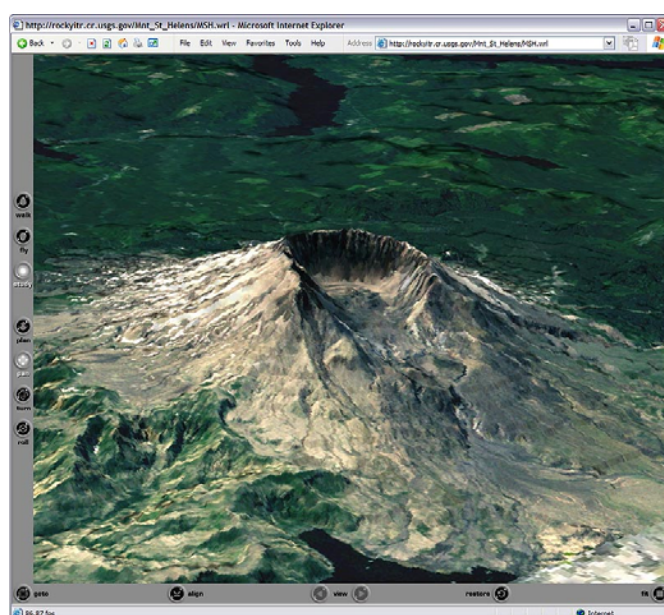


Figure 2. Map service displaying 2004 fires and agency burn plans.

Mount St. Helens Activity

In light of the recent volcanic and earthquake activity in and around Mount St. Helens, WA, RMMC has created a new website. The website allows visitors to view a 3-D terrain model, shown at right, and link to other sites such as the USDA's VolcanoCam, RMMC's Natural Hazards Support System website, the USGS Cascades Volcano Observatory, and local news channels. For further information about the website, contact Drew Probst, dtprobst@usgs.gov



The website is located at:

<http://rockyitr.cr.usgs.gov/RMMC/Main/MntStHelens.html>

New to RTA

Andre Bousseilaire began his career at RMMC in the Digital Data Section. He switched careers to become a Unix and Windows system administrator. He provides support for Softcopy Stereo Systems, scanners, and the NHD and DEM Production Units.



In his early years, Galen Sharp toured Europe living off his sketches and portrait drawings. He returned to the US, married, had a family, and several careers. Seventeen years ago, he returned to school, obtained a degree in computer programming and is currently an Oracle developer.



Dick Vogel comes to RTA from the Branch of Program Management. He has been with RMMC for 20 years, the USGS for 30 years, and the Government for 37 years. His expertise is in manipulating databases for use with ArcMap and programming in Visual Basic.



On-Going Events

Tuesdays at 10:00 a.m.: Remote Sensors Users Group, Denver

Weekly: Central Region Colloquium Series

Monthly: Federal GIS Coordination Group, Building 810, Denver Federal Center

Monthly: Regional Interagency Mapping Coordination Working Group (RIMCOWG), Building 710, Denver Federal Center

Workshops & Presentations

July 11-14: 29th Hazards Research & Applications Workshop; Boulder, CO

August 9-13: 2004 ESRI User Conference; San Diego, CA - Schneider, Riegle, Ornelas, Stefanacci

September 11-15: American Fisheries Society (AFS); Anchorage, AK

Upcoming Events

October 2-6: Water & Environment Federation (WEF); New Orleans, LA

October 24-27: American Association of Petroleum Geologists (AAPG); Cancun, Mexico

November 9: RMMC GIS Day

November 17: World GIS Day 2004

November 14-18: Society for Environmental Toxicology & Chemistry; Portland, OR

November 30-December 4: National League of Cities; Indianapolis, IN

UNITED STATES GEOGRAPHY AND CLIMATE TRIVIA QUIZ (PART 1)

So... you think you might know something about geography? Give this quiz a try and see how well you fare. The quiz was put together by RTA's very own quizmaster, *John Kosovich*. Answers are on the bottom of page 5. If you do well (and even if you don't), you get to have a shot at Part 2 of the quiz in the next issue.

1. Rank the top 10 states in order of highest average elevation.
2. Rank the top 10 states in order of greatest land area.
3. Rank the top 10 states in order of greatest population, according to the 2000 census.
4. Rank the 5 smallest states in land area west of the Mississippi River, from smallest to largest.
5. Rank the 5 largest states in land area east of the Mississippi River, from largest to smallest.
6. What state west of the Mississippi River has the lowest population? East of the Mississippi? Values?
7. Which coastal states are in the top 10 of highest average elevation? Ranks?
8. Which state has the **highest** lowest elevation? Value?
9. Which state has the **lowest** highest elevation? Value?
10. Name a state with its lowest elevation below sea level. Value?
11. What state east of CO has the highest average elevation? Rank?
12. What state east of the Mississippi River has the highest average elevation? Rank?
13. How many states have highest elevations that are lower than CO's lowest elevation? Name at least 5.
14. Not including CA and TX, what are the top 10 states in population west of the Mississippi River?
15. Not including CA, what are the top 5 states in population entirely west of the 102nd parallel (CO's eastern border)?
16. Which states have the same rank for land area and average elevation? Ranks?
17. Which is the only state to have never recorded a temperature below zero degrees F?
18. Has any state **never** recorded a temperature of 100 degrees or more?
19. What state has the highest recorded temperature? Lowest recorded temperature?
20. What state has the **lowest** record high temperature?

Compiled or derived from the following sources:

U.S. Geological Survey, *Elevations and Distances in the United States*, 2001 edition

U.S. Geological Survey, *Largest Rivers in the United States*, Open File Report 87-242, May 1990

U.S. Census Bureau, 2000 Census web site and *1999 Statistical Abstract of the United States*

TRAVELS WITH BEV

In early September, I took a vacation in California with a group of friends to hike a section of the Sierra High Route. The complete "route" is a 195-mile, mostly off-trail traverse of the range and closely follows the timberline country of the Sierra Nevada. I had recently purchased a Garmin Legend GPS to take on this trip and also purchased and loaded the 1:24,000-scale topo maps for the area. The first day out we encountered the easiest terrain of the trip and I was semi-glued to the GPS, delighted at how well the route I previously uploaded was working out. My hardcopy maps served to validate that the path we were taking was correct. The remainder of the route, however, provided few opportunities to gaze at the GPS. Many hours were spent hiking up and down steep and loose talus. We crossed three major passes and encountered some class 3 terrain, where hand and foot holds were necessary to continue down the steep, rocky slopes.

After five days of this grueling trip, I was ready to get safely out to the road and our vehicles. The final day of travel, I put new batteries in



the GPS and headed out of camp into heavy, biting winds. We stopped briefly in some talus to shed some clothes and proceeded down. Again we stopped to shed more clothes and I pulled out my GPS only to have my heart sink. All I had around my neck was the cord and flat piece of the GPS that attaches to the

main body of the unit. In my haste to get out of the cold, I hadn't properly secured the pin that unites the pieces together. Although I had an

idea where I might have lost the GPS, I couldn't face retracing my steps. As I walked on, I encountered a few climbing parties moving up the route. I stopped a group of three young climbers and asked if they would take my phone number in case they spotted the GPS. I gave them the piece that was around my neck in the off-chance they would find the missing body. It seemed like a useless plea at the time, but I decided I had nothing else to lose. My friends and I figured that to find the GPS in this terrain would be like trying to find a needle in ten haystacks! I hiked out, mostly glad to still be in one functioning piece, but also dejected at losing my new toy.

It took a few days of cross-country travel by car to get back home. After unpacking, I listened to my voice mail messages. The last message was from a man whose name didn't ring a bell. As I listened, he started talking about meeting me in the Sierra. Then he relayed that his party found my GPS. Stunned, I stood there listening as he recounted how the woman in his party had literally almost stepped on it. I was sure the thing was buried in a hole about ten feet from the surface of the top rocks, so I was shocked to hear that not only had this group found the GPS, but that they called to ask me where to send it. I was overjoyed. Somehow this event made the whole trip take on an added meaning. A few days later, my GPS was back home. - *Bev Friesen*



Social Committee Farewell Luncheon

On September 17, the RMMC Social Committee hosted its final event: a free lunch to all Center employees. The Office of the Regional Director and Biological Resources Discipline employees were also invited. Approximately 85 people attended. The committee provided fried chicken, cole slaw, bread, and drinks. Attendees brought side dishes and desserts to share. After lunch, a drawing for door prizes was held. Thanks to all who have contributed and attended events throughout the years. The camaraderie, conversations, and laughter that accompany these events will be missed.



ANSWERS TO TRIVIA QUIZ (from p. 4)

1. CO, WY, UT, NM, NV, ID, AZ, MT, OR, HI
2. AK, TX, CA, MT, NM, AZ, NV, CO, WY, OR
3. CA, TX, NY, FL, IL, PA, OH, MI, NJ, GA
4. HI, LA, AR, IA, WA
5. GA, MI, IL, WI, FL
6. WY (493,782); VT (608,827)

7. OR (9), HI (10)
8. CO (3315 ft.)
9. FL (345 ft.)
10. CA (-282 ft.), LA (-8 ft.)
11. NE (12)
12. WV (19)
13. 18 (AL, AR, CT, DE, FL, IL, IN, IA, LA, MI, MN, MS, MO, NJ, OH, PA, RI, WI)

14. WA, MO, AZ, MN, LA, CO, OK, OR, IA, KS
15. WA, AZ, CO, OR, UT
16. IA (23), ME (39), NJ (46)
17. HI (12 = record low; FL = -2)
18. No
19. CA (134 degrees); AK (-80)
20. Tie - AK, HI (100 degrees)

Newsletter Staff

Design Editor – Sabrina Huerta-Pinon
(srhuertapinon@usgs.gov)

Co-Editors – Patty Volkel
(pdvolkel@usgs.gov) and Maria McCormick
(mlmccormick@usgs.gov)

Web Design – Drew Probst
(dtprobst@usgs.gov)

Photographers – Patty Volkel
(pdvolkel@usgs.gov) and Catherine Costello
(ccostello@usgs.gov)

Proofreaders – Melanie Hood-Lofthouse
(mkhlood@usgs.gov) and Lisa Scales
(lmscales@usgs.gov)

Staff Advisor – Tom DiNardo
(tpdinardo@usgs.gov)

We're on the Web!
<http://rockyitr.cr.usgs.gov/newsletter>

**Photo Credits:**

Front Page:
Wind River, WY- John McCammon

Back Page:
Top: Mt. Hood through the windshield - John Kosovich
Bottom: Multnomah Falls, OR - John Kosovich

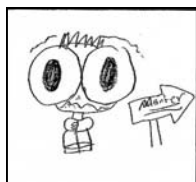
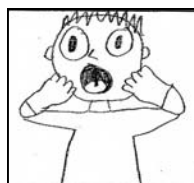
IN THE SPOTLIGHT...

John Guthrie is a Computer Scientist currently working on the Sierra Wildland Fire Reporting System. John started his USGS career in Field Surveys at the Western Mapping Center in 1979. He transferred to RMMC in 1986 to enter the Cartographer Development Program and was placed in the Boundaries and Names Unit. As computer technology became increasingly prevalent, John became involved in database development and software programming. John created programs and developed processes to help the B&N unit function more efficiently.



In 1999, John received a Certificate of Advanced Study in Computer Information Systems from the University of Denver. Some of his past projects include: creating DEM Cell Editing tools, various GNIS tools, working on the ODB project, and several web mapping applications such as the EPA Big Hole Emergency Response, the South Sierra Geographic Information Cooperative, and GeoMAC. John has also taught an in-house Java programming class. Because of his work on fire applications, John went to Australia to help develop a system similar to GeoMAC. John has also assisted with the Space Shuttle Columbia Recovery, and several Wildland Fire Use Fires applying his GIS and emergency response expertise.

John serves as the West Douglas County Fire Protection Mapping Officer and serves as a liaison between the Fire Department and the Boy Scouts. He has taken several "adventure trips" with the Boy Scouts to such places as Saskatchewan, Canada, and the High Sierras in California. John is also involved in church activities, helping to build churches in Mexico. John has only four cats now, due to the recent mountain lion infestation near his home, but the kids, Becky, 18 and Tyler, 16, are fine.

Match Game

Match the caption on the right with the picture on the left. I'm sure there will be more than one caption to fit a picture..... Have fun.

1. You want how much for travel?
2. You will be working with _____ on this project.
3. My SOI has been approved!!!
4. I gotta write what?!?
5. You want that when?
6. We've adjusted the budget and you don't have one anymore.
7. You mean there are more security documents to do?
8. Hmm... I need more resources.
9. How am I going to get this done on time?
10. It's Friday!!!!